

Genetics and Plant Breeding-III

Set No- 01

- a) Define plant breeding. Mention the objectives of plant breeding. [2015, 14, 13]
- b) Discuss the method of conservation of PGR. [2014]
- c) Give plant evolution of brassica. [2014]
- d) What is meant by PGR. Write types of PGR and center of origin of the cultivated crop plants. [2015, 13]
- e) What is genetic erosion & genetic vulnerability. [2015, 13]

Set No- 02

- a) Give the comparison between pure line and mass selection. [2015, 13]
- b) Describe brief the procedure of pedigree method in self pollinated crops with flow diagrams. [2015]
- c) Describe brief the procedure of single seed descent method in self pollinated crops with flow diagrams. [2013]
- d) List the breeding methods of self pollinated crops. [2015, 13]
- e) List breeding methods of cross pollinated crops. [2013, 15]
- f) Compare between pedigree & backcross method of breeding. [2013]
- g) Compare the buck & pedigree method. [2014]
- h) Describe in brief the procedure of backcross method for transferring of recessive gene for disease resistance from a wild variety to a susceptible commercial variety with flow chart. [2014]

Set No- 03

- a) Give comparison among hybrid, synthetic and composite varieties. [2015]

- b) Write merits & demerits of hybrid variety. [2015, 13]
- c) Define synthetic varieties. Write merits & demerits of synthetic variety. [2014]
- d) Write the steps of variety development and seed production system. [2015]
- e) Describe brief the procedure of simple recurrent selection method in cross pollinated crops with flow diagrams. [2014]
- f) Give comparative discussion among the 4 (four) method of recurrent selection. [2014]
- g) Describe the cytoplasmic genetic male sterility techniques for the hybrid seed production. [2013]

Set No- 04

- a) State causes of polyploidy. [2015]
- b) Give the importance of auto and allopolyploids in crop improvement. [2015, 13]
- c) Write down the induction & use of allopolyploids & autopolyploid in crop improvement. [2013]
- d) Write the induction of autopolyploid. [2015]
- e) Write factors affecting radiation effects on chemical in mutation breeding. [2014]
- f) Write the procedure of mutation breeding for oligogenic traits with flow diagram. [2014]
- g) Differentiated between auto & allopolyploids. [2014]
- h) Give characteristic of clone. [2013, 15]
- i) Compare and contrast among clone, pureline & inbreed. [2013]
- j) What is meant by polyploid breeding. [2013]

Set No- 05

- a) Define distal hybridization. [2015, 14]
- b) Narrate the procedure, merits & demerits of clonal selection. [2015]
- c) Describe importance of Alien-Addition & Alien-substitution lines in crop improvement. [2014]
- d) Distinguish between biotic & abiotic stress. [2014]
- e) State the process of Rye chromosome addition to wheat. [2014]
- f) Give the production of alien addition & substitution lines through a flow diagram. [2013, 12]
- g) Describe cytogenetics of wheat with reference to origin, distribution, and give the possible evolutionary pathway of modern wheat through floral diagram. [2013, 11]
- h) Describe brassica triangle with figure. [2013, 12]
- i) Give evolutionary pathway of Brassica through floral diagram. [2012]
- j) Give evolutionary pathway of *Oryza sativa* & *Oryza glaberrima* through floral diagram. [2011]

Set No- 06

- a) What is drought resistance? Write various morphological and anatomical features associated with drought resistance of crop plants. [2015, 13]
- b) Define haploid. Narrate the application of haploidy in crop improvement. [2015, 14, 13]
- c) What is meant by resistance? write the mechanism of resistance of plants against drought. [2014]
- d) What are nature of haploids and double haploids. [2014]
- e) Narrate the prospect and limitations of haploidy & double haploidy in crop improvement. [2014]

- f) Write the breeding achievement of rice, wheat, jute & tomato in Bangladesh. [13]

Set no- 07

- a) Discuss the backcross method for transferring of a dominant gene. [2015]
- b) Narrate principal and practices relating to evaluation and release of new crop varieties. [2015]
- c) List hybrid seed production methods. [2014]
- d) Write the procedure of gamate selection in maize for improvement of inbreed lines. [2014]
- e) Give the steps of development of a variety with flow chart. [2014]

Set No-08 (Short Note)

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| a. Heritability. [2015] | i. Comparison among hybrid, synthetic & composite variety. [2014] |
| b. Genetic advance. [2015, 14] | j. Mechanism of pollination. [2014] |
| c. Brassica triangle. [2015, 11] | k. Wide hybridization. [2013] |
| d. Plant breeder's right. [2015, 13] | l. Flow diagram of pedigree method. [2013] |
| e. Notified & non-notified crops. [2015] | m. Method of ex-situ conservation of PGR. [2013] |
| f. Stress breeding. [2015, 14] | n. Alien addition & substitution line. [2012] |
| g. Apomixis. [2015, 13] | |
| h. DUS test of variety release. [2014] | |